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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,060	03/24/2005	Osamu Yogi	046124-5368	4361

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EXAMINER

VO, ANH T N

ART UNIT	PAPER NUMBER
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2861

MAIL DATE	DELIVERY MODE
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10/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,060

Applicant(s)

YOGI ET AL.

Examiner

Anh T.N. Vo

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 13 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-12 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 07/30/07; 09/10/07; 09/14/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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FINAL REJECTION

The rejections over Hertz (US Pat. 4,346,387), Yogi et al. (US Pat. 6,811,090) and Pui et al. (US Pat. 6,764,720) are withdrawn in view of the amendments to the claims.

The prior art reference newly found necessitated anew ground of rejection is below:

CLAIM REJECTIONS

Claim Rejections - 35 USC § 112

Claims 1-2, 4-7, 9 and 14-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction or clarification is required.

In claim 1, the recitation "voltage" and "raw material liquid" on line 7 is confusing because it is unclear if this is additional "voltage" and "liquid" or further recitation of the previously claimed "voltage" and "liquid" on line 2.

In claim 2, the recitation "the potential" on line 4 lacks clear antecedent basis. It is not understood how the liquid can have the potential or a voltage. The same is true for claims 5 and 9.

In claim 4, the recitation "voltage" on line 3 is confusing because it is unclear if this is additional "voltage" or further recitation of the previously claimed "voltage" in claim 3.

In claims 14-15, it is unclear how the recitation "wherein a voltage is applied between the ink in said ink nozzle and said flat electrode to form a droplet" is read on the preferred embodiment or seen on the drawings, and this recitation is misdescriptive because it is inconsistent with what is disclosed in the specification or shown on the drawings. For example, Figure 1 clearly shows that the flat electrode (3) or electrodes on the nozzle housing do not form the ink droplet since the ink droplets are created by the transducer or the pressure. The same is true for claim 15.

The remaining claims are dependent from the above claims and therefore also considered indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 14-16 are rejected under 35 USC 102 (e) as being anticipated by Yamada et al (US 6,623,113).

Yamada et al discloses in Figures 1-2 and 4 an ink jet recording device comprising:

- a flat electrode (30) is disposed opposite an ink jet printing apparatus (100) (Figure 1);
and
- an ink nozzle housing (10) and electrodes (25) provided on the outer circumference of the nozzle (12), wherein a voltage is applied between said ink nozzle and said flat electrode (30) to form a droplet on a sheet (60) provided by a circuit (40).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill

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in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9-12 and 14-17 are rejected under 35 USC 103 (a) as being unpatentable over) in view of Kijama et al (JP409272207) in view of Yamada et al (US 6,796,632).

Kijama et al discloses in Figures 1-6 a printing device comprising *an* ink nozzle (33A) and a dilution nozzle (33B) that both housed for ink and diluting liquid, see Figure 5.

However, Kijama et al does not disclose electrodes around the nozzles, a flat electrode being placed at opposite the front ends of the nozzles (33A, 33B) and the voltage applying unit.

Nevertheless, Yamada et al suggests in Figure 4 a printing device comprising electrodes (25), a flat electrode (30) and voltage supplying unit (40) for deflecting ink drops to provide high quality images (column 1, lines 5-11).

It would have been obvious to a person having skill in the art at the time the invention was made to employ the electrodes and the voltage supplying unit as suggested by Yamada et al in the device of Kijama et al for the purpose of deflecting the ink drops and the dilution drops to provide high quality images.

Since the weight of the ink drop is heavy or equal to the weight of the dilution drops; the voltage potential provided by the unit (40) for direct the ink drops is obviously higher than or equal to the voltage potential provided for direct the dilution drops.

Although Kijama et al does not disclose that the ink nozzles comprising a plurality of nozzles; however, a skilled artisan realizes that the modified printing device of Kijma et al can be used to print color images. Thus, it would have been obvious to employ a plurality of ink nozzles for different colors in the modified device of Kijama et al for the purpose of printing color images.

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Also, selecting the optimum material such as glass as recited in claim 17 is considered to be a matter of a mechanical design expedient for an engineer. Lacking of showing any criticality, it would have been obvious to a person having skill in the art at the time the invention was made to select the glass nozzle for the purpose of reducing rusty or oxidation.

Response to Applicant's Arguments

The applicant's arguments with respect to the prior art rejection have been carefully considered and have been traversed in view of the new grounds of rejection over Kijima et al. (JP Pat. 409272207A) and Yamada et al (US Pat. 6,623,113) references.


Allowable Subject Matter

Claims 8 and 13 are allowed.

CONCLUSION

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (571) 272-2262. The examiner can normally be reached on Tuesday to Friday from 9:00 A.M. to 7:00 P.M.. The fax number of this Group 2861 is (571) 273-8300.


ANH T.N. VO
PRIMARY EXAMINER
September 26, 2007